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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
| 10/578,616 | 05/08/2006 | Marcus Guzmann | 290780US0PCT | 3592 |
| 22850 | 7590 | 01/03/2008 | | |
| OBLON, SPIVAK, MCCLELLAND MAIER & NEUSTADT, P.C. 1940 DUKE STREET ALEXANDRIA, VA 22314 | | | EXAMINER CHOI, LING SIU | |
| | | | ART UNIT 1796 | PAPER NUMBER |
| | | | NOTIFICATION DATE 01/03/2008 | DELIVERY MODE ELECTRONIC |

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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Office Action Summary

Application No.

10/578,616

Applicant(s)

GUZMANN ET AL.

Examiner

Ling-Siu Choi

Art Unit

1796

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 05 October 2007.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 9-18 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 14-18 is/are rejected.
- 7) ☒ Claim(s) 9-13 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

1. This Office Action is in response to the Amendment filed 10/05/2007. Claims 1-8 were canceled and Claims 9-18 have been added. Claims 9-18 are now pending.

Claim Objections

2. Claims 9-18 are objected to because of the following informalities: (a) Claim 9, line 6, "aminoalkanesulfonic acid" is suggested to be changed to --aminoalkanesulfonic acid to form a sulfonated polymer-- because there lacks of antecedence to cite "the sulfonated polymer" on line 12 and (b) Claim 14, line 1, "obtainable" is suggested to be changed to --obtained--.

Appropriate correction is required.

Claim Analysis

3. Summary of claim 9:

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| | | |
|--|--|--|
| A process for preparing (meth)acrylic acid copolymers, comprising: | | |
| A | free-radical polymerization of (meth)acrylic acid to form a polymer I | |
| B | amidation of the polymer I by reaction with at least one aminoalkanesulfonic acid | |
| wherein the molar ratio of monomers in polymer I to aminoalkanesulfonic acid is from 15:1 to 2:1 and | | |
| the (meth)acrylic acid copolymer comprises | | |
| | a | from 30 to 95% by weight of a poly(meth)acrylic acid basic framework |
| | b | from 5 to 70% by weight of amide units based on aminoalkylsulfonic acids |
| the total weight of the units in the sulfonated polymer being 100 wt% and all weights being based on the sulfonated polymer | | |

Summary of claim 14:

A (meth)acrylic acid copolymer which is obtainable by a process according to claim 9, wherein the sulfoalkylamide structural units are randomly distributed in the (meth)acrylic acid copolymer

Claim Rejections - 35 USC § 102

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claims 14-18 are rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Fong et al. (US 4,604,431).

Fong et al. disclose a sulfonated polymer obtained by the process comprising charging a solution of polyacrylic acid (85 mole %)-ethyl acrylate (15 mole %), taurine [amino ethane sulfonic acid] (12.5 g), and sodium hydroxide (50%, 8 g) into a reactor and heating to 150°C for four hours, wherein the sulfonated polymer contains about 9 mole % sulfoethyl amide by C¹³ NMR method and the molecular weight of the starting polymer varies from 1,000 or 2,000 up to as much as several million (col. 2, lines 3-17; claim 5). Fong et al. further disclose that "[t]he molecular weight and the degree of conversion to acrylamido lower alkyl, aryl or arylalkyl sulphonic acid polymers will depend primarily upon the intended end use.....For flocculation applications, the molecular weight should be as high as possible, e.g. about 500,000 to as much as several million" (col. 2, lines 3-17). However, Fong et al. are silent on the random distribution of the sulfoalkylamide groups in the sulfonated polymer. In view of the molar amount of monomer unit in the polymer being greater than the one of aminoalkane

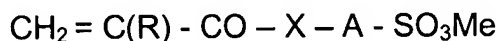
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sulfonic acid, the interaction of the polymer and aminoalkanesulfonic acid would lead to a random distribution of the sulfoalkylamide groups in the sulfonated polymer.

Response to the Arguments

7. For Claims 14-18:

Hirsch et al. (US 4,450,013) disclose a dispersant which is a copolymer of: (A) 40 -90 wt% of an ethylenically unsaturated aliphatic carboxylic acid selected from the group consisting of acrylic and methacrylic acids, (B) 10 to 60 percent by weight of a compound having the formula:



where R is hydrogen or methyl; X is -NH- or -O-; A is C₁₋₈ alkylene or C₁₋₃ substituted alkylene, and Me is hydrogen, sodium potassium, or ammonium; and (C) 0 -10 wt% of another ethylenically unsaturated copolymerizable monomer selected from the group consisting of acrylate and methacrylate esters of C₁₋₄ alcohols, C₁₋₄ esters or half esters of maleic acid, acrylo- and methacrylonitrile, acryl- and methacrylamide (claim 1).

Amick et al. (US 4,711,725) disclose a water soluble polymer to inhibit the precipitation of calcium phosphate in an aqueous solution, corrosion, and scale formation, the water soluble polymer comprising about 42 - 84 wt% of (meth)acrylic acid and salts thereof, between about 11 and about 40 wt% of 2-acrylamido - 2- methyl propane sulfonic acid or salts thereof, and about 5 -30 wt% of one or more units selected from the group consisting of vinyl esters, vinyl acetate and substituted

acrylamide, where the water soluble polymer has a weight average molecular weight ranging from about 3,000 to about 25,000 (col. 1, lines 36-54; claim 1).

Lange et al. (US 4,604,431) disclose a copolymer to inhibit the corrosion of a metal surface, obtained by copolymerizing about 20-80 wt% of 2-acrylamido-2-methylpropane sulfonic acid and about 20-80 wt% of acrylic acid in isopropanol, wherein the molecular weight of the copolymer is in the range from about 1,000 to 250,000 (col. 7, lines 19-36; claims 1-2).

In view of the Amendment, "the homopolymerization of sulfoalkylamide monomer is kinetically preferred in comparison to the copolymerization of the two groups of monomers, which would be necessary to obtain a copolymer in which the sulfoalkylamide monomers are randomly distributed." Thus, the polymer disclosed by Hirsch et al., Amick et al., and Lange et al. does not have sulfoalkylamide groups randomly distributed in the polymer.

8. For Claims 9-13: Fong et al. disclose a sulfonated polymer obtained by the process comprising charging a solution of polyacrylic acid (85 mole %)-ethyl acrylate (15 mole %), taurine [amino ethane sulfonic acid] (12.5 g), and sodium hydroxide (50%, 8 g) into a reactor and heating to 150°C for four hours, wherein the sulfonated polymer contains about 9 mole % sulfoethyl amide by C¹³ NMR method and the molecular weight of the starting polymer varies from 1,000 or 2,000 up to as much as several million (col. 2, lines 3-17; claim 5). However, Fong et al. do not teach or fairly suggest

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the claimed process, wherein "the molar ratio of monomers in polymer I to aminoalkanesulfonic acid is from 15:1 to 2:1".

9. For Claims 14-18 which are drawn to a product-by-process, the caselaw has held that "[t]he patentability of a product does not depend on its method of production. If the product in the product-by-process claim is the same as or obvious from a product of the prior art, the claim is unpatentable even though the prior product was made by a different process." *In re Thorpe*, 777 F.2d 695, 698, 227 USPQ 964, 966 (Fed. Cir. 1985). "[W]herein the molar ratio of monomers in polymer I to aminoalkanesulfonic acid ranges from 15:1 to 2:1" is part of process. Thus, it does not carry the patentable weight.

Conclusion

10. THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).


A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of

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the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

11. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ling-Siu Choi whose telephone number is 571-272-1098.

If attempt to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Wu, can be reached on 571-272-1114.


LING-SUI CHOI
PRIMARY EXAMINER

December 15, 2007